

# ALONG CAME A SPIDER...

The wandering spider may be the most aggressive arachnid on the planet, but its venom could offer a natural alternative to Viagra. **MARK BROWNING** raises an eyebrow.

**BENEATH A FULL** moon in the Caribbean, a drunken sailor weaves along the creaking deck and is drawn to the slumped form of a shipmate. He kicks the man to rouse him but the body does not move. He bends down. The prostrate man's face trembles, drool runs down his chin, his half-open eyes are glazed. The sailor flees to tell the captain: "It's happened again!". As he runs, he looks at the cargo of bananas they took on in Panama and curses their presence. Unseen, an eight-legged shape slips silently into the shadows.

The highly venomous wandering spider, also known as the banana spider, could be the origin of an old nautical superstition that bananas on board bring bad luck. The theory goes that as sailors found paralysed and dying mates on ships that carried bananas, they also attributed other misfortunes to the fruit: poor fishing, bad navigation, severe storms and so on. It's not a bad theory. The spider frequently stows away in banana cargoes – even making it to Britain to bite people (see box, right).

This large arachnid, with a body length of up to 5cm and a leg span of 13cm, sports long fangs, huge venom glands and is so aggressive it has been known to rush up the handle of a broom to bite its attacker.

There are eight wandering spiders in the genus *Phoneutria*, but the black-bellied wandering spider *P. nigriventer* is responsible for most bites on humans. This is because it ranges throughout the populous areas of south-eastern Brazil, including Rio and São Paulo.

## CHASING DOWN PREY

Wandering spiders inhabit forests on the Atlantic side of the Andes, from Costa Rica southward through Panama, Columbia,

Ecuador, Peru, Brazil, Paraguay and Bolivia. They do not build webs, but instead use their eyesight and astonishing speed to capture insects, amphibians and small mammals on the forest floor at night. They subdue their victims with a jab of venom from the fangs. Even the male may end up on the menu of the larger female unless he performs a seductive dance to signify that he is a potential mate.

In daylight, wandering spiders hide under logs and rocks and inside bromeliad leaves and banana plants. But their nightly 'wanderings' often lead them into people's homes, where they seek sanctuary in places such as shoes and clothing. This means the spiders regularly come into surprising and pain-inducing contact with humans.

Between 1970 and 1980, wandering spiders were responsible for the hospitalisation of about 7,000 people in south-eastern Brazil. Other studies report approximately 5,000

bites and five deaths in Brazil each year. A large number of bites may go unreported since so many people live in highly isolated areas in South America.

There is no question that the wandering spider's bite is extremely dangerous. The venom packs a powerful cocktail of neurotoxins, and causes one of the most severely painful bites of any spider. Symptoms include excruciating pain, soaring blood pressure, irregular heartbeat, copious salivation, vomiting, paralysis, shock, cardiac arrest, respiratory failure and death.

## VENOM VIAGRA

But one of the spider venom's most common side-effects has recently caught the attention of the medical community: men who have been bitten invariably experience a very uncomfortable erection that lasts for several hours. This oddity has spawned extensive studies into the venom's possible use for treating erectile dysfunction in men (see box, top right). But trying to extract the venom is fraught with peril.

When it feels threatened, which is very often, the spider seems to flaunt its potency

The cheetah of the spider world, the black-bellied wandering spider combines speed, aggression and a deadly bite to lethal effect.

defensive posture.

"I try to avoid making them angry at all costs," he responded. "Once a semi-adult escaped and the only handy tool to stop it was a snake hook. When I tried to block its way, it climbed up the snake hook in a second and I just had to drop it. Then it found a hole in the wall and I had to break open the wall to get at it." That was when he decided to stop keeping wandering spiders.

Of course, these are examples when the spider feels threatened. And, even though any bite by a wandering spider must be treated seriously, only a small percentage of bite victims receive antivenin, with less than one per cent of bites resulting in fatalities, mostly among children and the elderly. Still, tests show that the venom is 20 times more powerful than that of the black widow and that a single wandering spider contains enough poison to kill 200 mice.

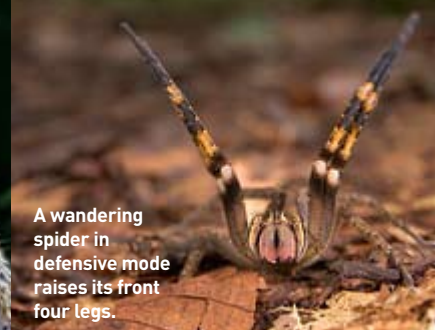
Spiders have always inspired fear – even hysteria. But they have also caught our imagination. Native American mythology, inspired by the geometric designs of spider webs, features a spider as a goddess that spun the world into existence. And while most of the world's 40,000 species use venom to subdue their prey, wandering spiders are among the very few that are dangerous to us. But the potential use of their venom in medicine illustrates that even those creatures we regard as heinous may offer surprising benefits.

## DANGEROUS PET

Maik Dobiey is a German collector of exotic creatures, including venomous snakes and spiders. In researching this article, I asked Maik if he had any photos of the spider in a

## RAISING HOPES

The long-lasting erection caused by wandering spider bites has encouraged the intensive study of its venom in the hope of treating erectile dysfunction. Scientists have now isolated the key chemical in the venom and found it to be a string of amino acids called a peptide that relaxes the muscles of the penis so that blood rushes into the vascular tubes. Researchers believe that combining existing drugs such as Viagra with a synthetic form of the peptide could result in a more effective treatment.



A wandering spider in defensive mode raises its front four legs.

## SINISTER STOWAWAYS

Wandering spiders have long been known to hide in banana crates bound for Europe and North America. Though modern methods of fumigation have reduced such incidents, spiders still occasionally turn up in the wrong place.

» In 2005, Kim Boxwell, a woman from Cornwall, was bitten by a wandering spider hiding in a bunch of bananas she had bought from a supermarket and was taken by ambulance to the local hospital.

» That same year, a more severe case occurred when Matthew Stevens, a chef in Somerset, was bitten twice. His life may have been saved by the photo he took of the creature on his mobile phone which allowed experts at Bristol Zoo to identify his assailant as a wandering spider.

» Wandering spiders have also turned up in stores in Kent and The Netherlands.



A nasty surprise in a bunch of bananas.

## DID YOU KNOW?

The scientific name for the genus of wandering spiders, *Phoneutria*, aptly means 'murderess' in Greek.